



jLISP

LJSP

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- ▶ Motivation
- ▶ Components
- ▶ Programming
- ▶ Modules
- ▶ Plugins



Yet another LISP implementation?

Yes!



Yet another LISP implementation?

- ▶ Other LISP Implementations difficult to extend
 - Last OpenLISP version from 2011
 - All features available only with FreeBSD
 - OOR
 - C code hard to read
 - Lispers.net
 - Closed source

- ▶ Objectives of jLISP
 - Rapid prototyping for experimentation with new features
 - Easily portable, in particular to smartphones
 - Open source



- ▶ xTR
 - ETR and ITR, normally combined

- ▶ Mobile Node
 - xTR with EID on LISP interface

- ▶ RTR
 - Support for LCAF ELP Type

- ▶ Mapping System
 - Simple Mapping System with hash-based entries
 - Integrated Map Resolver
 - Both communicate over a simple API
 - One or both components can be exchanged easily



- ▶ Object oriented
 - Classes for each message type

- ▶ Integrated parser for all types of LISP packets

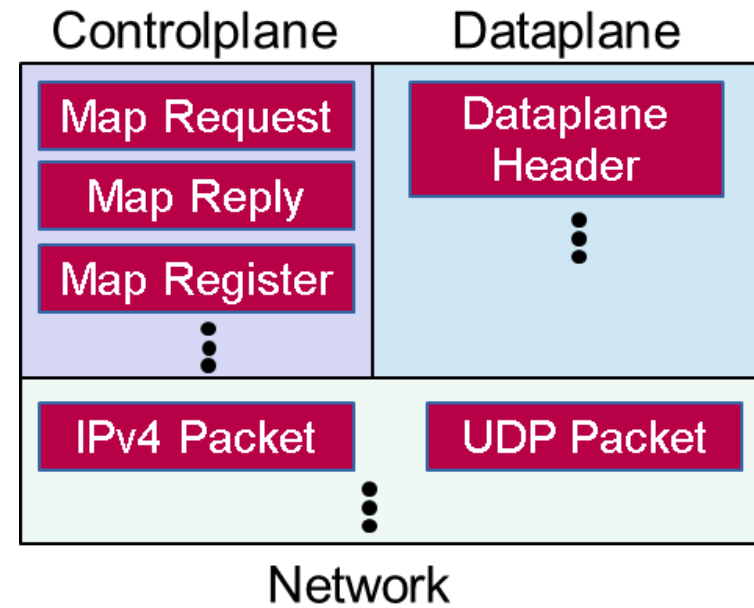
- ▶ Platform independence
 - Java as programming language
 - Tun interfaces
 - Android version with VPN API possible



- ▶ Networking
 - IPv4, IPv6
 - UDP

- ▶ Control plane
 - All message types from RFC 6830
 - LCAF
 - All types implemented
 - ELP / NAT types included in xTR/RTR

- ▶ Data plane





► Extensions without knowledge of the code

■ Predefined hooks

```
public byte[] sendRawData(byte[] data);

public DataMessage sendLispData(DataMessage data);

public DataMessage receiveLispData(DataMessage data);

public byte[] receiveRawData(byte[] data);

public ControlMessage sendControlMessage(ControlMessage data);

public ControlMessage receiveControlMessage(ControlMessage data);
```

■ Control messages can be modified

- Before transmission
- Upon reception

■ Data plane messages can be modified

- Raw data before encapsulation and after decapsulation
- Encapsulated data before transmission and after reception



Questions?

ITC Demo: http://kn.inf.uni-tuebingen.de/demos/itc16_jlisp

Source Code: <https://github.com/jLisp/jlisp>